REMARKS

Upon entry of this amendment, the pending claims of the CPA are claims 10-13, 39, 67, 81, 83, 100 and 102. Claims 35, 73-80, and 91-96 are canceled without prejudice to refiling in a continuation application. No new matter is introduced by this amendment.

Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made". Also attached is a page captioned "Clean copy of all pending claims".

The Director is hereby authorized to charge any additional fees required with the filing of this paper or credit any overpayment in any fees to our deposit account number 08-3040.

Respectfully submitted,

HOWSON AND HOWSON
Attorneys for Applicant

By Mary E. Bak

Mary E. Bak
Registration No. 31,215
Spring House Corporate Center
Box 457
Spring House, PA 19477
(215) 540-9200

Version with Markings to Show Changes Made

IN THE CLAIMS

Cancel claims 35, 73-80, and 91-96.

Clean Copy of All Pending Claims

10. A method of recombinantly expressing the P39.5 protein or a polypeptide or peptide fragment thereof comprising the steps of culturing a recombinant host cell transformed with a nucleic acid sequence encoding said protein or fragment under conditions which permit expression of said protein or peptide.

11. The method according to claim 10 further comprising the step of isolating said expressed protein from said cell or said cell medium.

12. The method according to claim 10 wherein said P39.5 protein is a fusion protein.

13. The method according to claim 10 wherein said P39.5 protein is a deletion mutant protein.

39. A protein or a fragment thereof of a Borrelia cassette string, isolated from cellular materials with which it is naturally associated, and selected from the group consisting of P1-1, P3-1, P6-1, P7-1, P9-1 and P12-1.

67. A protein or polypeptide selected from the group consisting of:

(a) an isolated P39.5 protein which is expressed in vitro by Borrelia garinii strain IP90 spirochetes, and has a relative molecular mass of 39,500 daltons;

(b) a protein comprising the amino acid sequence of SEQ ID NO: 2;

(c) a protein comprising the amino acid sequence of SEQ ID NO: 14;

(d) a fragment of (a) - (c);

(e) an analog of (a)- (c) characterized by having at least 80% homology with SEQ ID NO: 2 or 14;

(f) a homolog of (a) - (c) characterized by having at least 80% homology with SEQ ID NO: 2 or 14;

(g) a fusion protein comprising the amino acid sequence of SEQ ID NO: 2 or 14, or an analog, homolog or fragment thereof fused to a second protein;

(h) a fusion protein comprising the amino acid sequence of SEQ ID NO: 2 or 14 to which are added fragments that are up to 95% identical to SEQ ID NO: 2 or 14;

(i) a deletion protein comprising the amino acid sequence of SEQ ID NO: 2 or 14 with one or more amino acids deleted therefrom;

(j) a protein of any of (a) - (i), which is chemically synthesized; and

(k) a protein of any of (a) - (j) which is a recombinant protein.

81. A kit for diagnosing infection with B. burgdorferi in a human or animal comprising a P39.5 protein or fragment thereof of claim 67.

83. A method of identifying compounds which specifically bind to P39.5 or a fragment thereof, comprising the steps of contacting said P39.5 protein or fragment of claim 67 with a test compound to permit binding of the test compound to P39.5; and determining the amount of test compound which is bound to P39.5.

100. A kit for diagnosing infection with B. burgdorferi in a human or animal comprising a B. garinii cassette string protein or fragment thereof of claim 39.

102. A method of identifying compounds which specifically bind to a B. garinii cassette string protein or fragment thereof, comprising the steps of contacting said protein

or fragment of claim 39 with a test compound to permit binding of the test compound to said B. garinii cassette string protein or fragment; and determining the amount of test compound which is bound to said protein or fragment.